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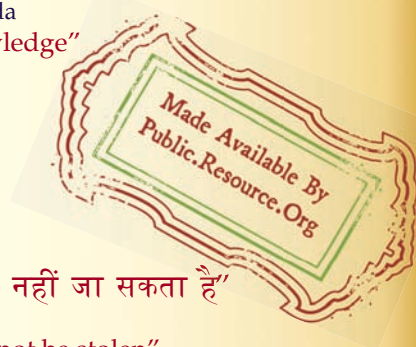
IS 4895 (1985): teak logs [CED 9: Timber and Timber Stores]



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“Knowledge is such a treasure which cannot be stolen”

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IS : 4895 - 1985

Indian Standard
SPECIFICATION FOR
TEAK LOGS
(*First Revision*)

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INDIAN STANDARDS INSTITUTION
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NEW DELHI 110002

Indian Standard

SPECIFICATION FOR TEAK LOGS

(*First Revision*)

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Indian Standard

SPECIFICATION FOR TEAK LOGS

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 28 February 1985, after the draft finalized by the Timber Sectional Committee had been approved by the Civil Engineering Division Council.

0.2 Asia-Pacific Regional Grading Rules for Teak Logs have been published by the Food and Agriculture Organization (FAO) of the United Nations. These rules are primarily intended for the export trade and are applicable only to teak logs having a minimum volume of 0.6 m³. The possibility of adopting these rules for the purpose of grading Indian teak logs has been considered by the Indian Standards Institution. Since a large majority of Indian teak logs average up to about 0.3 m³ in volume, the Asia-Pacific Regional Grading Rules for Teak Logs are not applicable to Indian conditions. This standard was, therefore, first published in 1968, to lay down a uniform set of grading rules to develop trade by replacing the individual specifications that existed between various buyers and sellers. As a result of usage of this standard, it was felt necessary to modify the extent of permissible defects in teak logs, keeping in view their availability. In this revision, therefore, the limits of permissible defects have been revised and their evaluation has been brought in line with IS : 3364 (Part 1)-1976*.

0.3 Logs being intended for conversion, their grading is based on the estimated sawn out-turn by normal method of conversion which again is dependent on: (a) the general quality of wood, and (b) the probable loss due to visible defects under normal methods of conversion. Subject to these conditions, the rules covered in this standard provide for the acceptance of the maximum number of defects permissible in a given grade. This, however, does not mean that a log having all the permissible defects for a grade would necessarily qualify it for the particular

*Methods of measurement and evaluation of defects in timber: Part 1 Logs (*first revision*).

grade. It does not also mean that a log having any one of the defects slightly in excess of the permissible limits would disqualify it for acceptance. Their location, distribution and combination with other defects are important in the final acceptance and determination of the grade. For example, the total absence of a certain defect, say, flutes, may permit a lenient view of another defect. It should, therefore, be understood that it is impossible to lay down standards for a natural product like timber strictly based on mathematical calculations and, in practice, much has to be left to the judgement of individual graders.

0.4 While formulating these rules, assistance has been derived from the Asia-Pacific Regional Grading Rules for Teak Logs provided by Food and Agriculture Organization (FAO).

0.5 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of specified value in this standard.

1. SCOPE

1.1 This standard covers the requirements of various grades of teak logs intended for conversion purposes.

1.2 It does not cover the requirements of teak logs for veneering purposes.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions and those given in IS : 707-1976† shall apply.

2.1 Curvature — The greatest deviation from a straight line drawn between the ends of a log.

2.2 Bee Hole — Hole in the wood caused by the larvee of the *Xyleutes* ceramica.

2.3 Crack — A separation of the fibres of wood appearing on the bole.

2.4 Defect — An abnormality or irregularity which lowers the value of wood by decreasing its strength or affecting adversely its working or finishing qualities or both, or its appearance or cut-turn on conversion. For the purpose of these rules, defects are divided according to kind and are evaluated in units with regard to size and distribution.

*Rules for rounding off numerical values (revised).

†Glossary of terms applicable to timber technology and utilization (second revision).

2.5 Flute — A natural channel on the surface of a log running more or less parallel to its axis and whose depth is measured at its deepest part.

2.6 Inbark — Patches of bark partially or wholly enclosed in the stem of a tree by later growth.

2.7 Shatter — An injury suffered in falling.

2.8 Units of Defect — Unit of a defect is a quantitative representation of the approximate degrade of the material for each defect.

3. GENERAL REQUIREMENTS

3.1 The logs shall be free from hollow heart, shatter, any kind of decay (rot) and live insect attack.

3.2 All buttresses, remnants of branches and large knots shall be trimmed flush with the bole of log. The two ends should be clean-cut with a saw and shall be as close to the plane at right angles to the axis as possible.

3.3 Plugging or covering of the visible defects shall not be permitted in any form.

4. PERMISSIBLE DEFECTS IN LOGS AND THEIR EVALUATION

4.0 The defect values apply to individual logs and not to consignments as a whole. The permissible defects and their evaluation are given in **4.1** to **4.10**.

4.1 Curvature

4.1.1 For every 2.5 m length of a log measured from its butt end.

<i>Deviation</i>	<i>Unit</i>
Up to 50 mm	0.02
Over 50 mm up to 75 mm	0.05
Over 75 mm up to 100 mm	0.08
Over 100 mm up to 125 mm	0.12
Over 125 mm up to 150 mm	0.16

4.1.2 Only a single curvature shall be permissible in any one log.

4.2 Shakes

4.2.1 All types of shakes up to 150 mm in length shall be permitted. The defect value shall be evaluated as per IS : 3364 (Part 1)-1976*. For

*Methods of measurement and evaluation of defects in timber: Part 1 Logs (*first revision*).

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more than one shake the units of defect shall be added together and for star shake, the value of the largest shake is multiplied by half the number of shakes in the star.

4.3 Flutes

4.3.1 Length of any flute, measured from the butt end of a log, shall not exceed 1.2 m.

4.3.1.1 Depth of any flute shall not exceed 75 mm and the aggregate depth of all flutes shall not exceed 150 mm. The unit of defect for permissible flutes shall be evaluated as per IS : 3364 (Part 1)-1976*.

4.3.1.2 When logs containing flutes are accepted, the aggregate depth of all the flutes shall be deducted from the mid-girth of these logs and the final mid-girth shall not be less than the ordered mid-girth.

4.4 Knots

4.4.1 The distribution of the knots (sound or unsound) shall be such that not more than half the number is in the central half of a log.

4.4.2 Sound knots up to 150 mm occurring 4 in number and up to 250 occurring 2 in number in a length of 2.5 m shall be permissible.

4.4.3 Unsound knots up to 100 mm in diameter occurring not more than 4 in numbers in a length of 2.5 m shall be permissible.

4.4.4 The units of defect shall be evaluated as per IS : 3364 (Part 1)-1976*.

4.5 Checks and Splits

4.5.1 Checks less than 50 mm in length and 2 mm in width shall be evaluated as 'No defect' provided they are not so numerous as to effect the out turn of the material on conversion.

4.5.2 Checks up to 200 mm in length and more than 2 mm in width shall be evaluated on shakes as per IS : 3364 (Part 1)-1976*.

4.5.3 Checks more than 200 mm shall not be permitted.

4.5.4 Splits up to 250 mm in length shall be permissible and evaluated as per IS : 3364 (Part 1)-1976*.

4.6 Twist

4.6.1 Twist up to 10° slope shall be permissible and shall be evaluated as per IS : 3364 (Part 1)-1976*.

*Methods of measurement and evaluation of defects in timber: Part 1 Logs (*first revision*).

4.7 Holes

4.7.1 Holes more than 12 mm in diameter shall not be permitted, unless agreed to between the purchaser and the supplier.

4.7.2 Holes having diameter more than 2 mm and up to 12 mm shall be permitted up to 5 in number per 1 m² area. They shall be so distributed that the loss under normal conditions of conversion not more than 25 percent. These shall be evaluated as per IS : 3364 (Part 1)-1976*.

4.7.3 Pin holes and holes up to 2 mm in diameter other than those due to live powder post beetles shall be permitted.

5. GRADES

5.1 The logs of 2.5 m length shall be graded as below depending on cumulative value of the permissible defects:

Grade 1 — No single log shall contain more than 2.5 units of defects.

Grade 2 — No single log shall contain more than 5 units of defects.

Grade 3 — No single log shall contain more than 7.5 units of defects.

5.2 For logs more than 2.5 m in length, the limits given in 5.1 shall be derived by the following equation:

$$\begin{array}{l} \text{Permissible number of defects in logs} \\ \text{more than 2.5 m in length} \end{array} = \frac{L}{2.5} \times P$$

where

L = length of log in m, and

P = permissible defect value for 2.5 m in length.

6. DIMENSIONS AND MEASUREMENTS

6.1 Dimensions — The minimum dimensions of the logs shall be the following:

Length : 2.5 m

Mid-girth : 1 m

6.2 Measurements

6.2.1 Length — It shall be taken as the shortest distance in metres from one extreme end to the other.

*Methods of measurement and evaluation of defects in timber: Part 1 Logs (first revision).

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6.2.1.1 The length shall be rounded off to the nearest lower 0.05 m.

6.2.2 Mid-Girth — In a log of a regular taper, the mid-girth shall be measured in centimetres at the mid-length of log; but not over the bark or any protuberances.

6.2.2.1 In a log with an irregular taper, three girth measurements shall be taken, that is, one near the mid-length at a place free from any protuberances and one at each end, the mean-girth being obtained by taking the average of these three measurements.

6.2.2.2 If the logs are inspected with the bark on, 40 mm shall be deducted from the mid-girth on account of bark.

6.2.2.3 The mid-girth of a log shall be rounded off to the nearest lower 0.01 m.

6.2.3 Volume — It shall be calculated by the Quarter Girth formula, the result being expressed in cubic metres correct to three decimal places as follows:

$$V = \left[\frac{G}{4} \right]^2 \times L$$

where

V = volume in m^3 ,

G = girth in m, and

L = length in m.

7. MARKING

7.1 Each log shall be legibly and indelibly branded on both the ends to indicate the following:

- a) Supplier's identification mark by abbreviated initials,
- b) Length and mid-girth of the log,
- c) Grade 1 by a square,
- d) Grade 2 by a triangle, and
- e) Grade 3 by a circle.

7.1.1 Each log may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

8. END COATING

8.1 After inspection, the ends of each log up to a distance of at least 150 mm shall be adequately coated with any of the end coatings recommended in IS : 1141-1973*.

*Code of practice for seasoning of timber (*first revision*).

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